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ABSTRACT

This study evaluated the Community for Learning (CFL) K-12 school reform program, which emphasizes high standards of student achievement and positive student self-perception. It investigated whether the program was meeting its learner centered design goals. Assessment of Learner-Centered Practices (ALCP) surveys were administered to 4th and 5th grade teachers and students at inner city schools in various stages of CFL implementation. Researchers noted relationships between teacher and student scores on the surveys and degree of CFL program implementation. Overall, teachers classified as high implementers generally demonstrated qualities associated with learner-centered teachers in prior research. There were significant relationships between teacher perceptions of learner centeredness as assessed by research-validated variables on the ALCP surveys and degree to which teachers were implementing the CFL program. High CFL implementers believed they were facilitating higher order thinking and adapting to individual differences, and they expressed more confidence in their ability to be effective teachers and facilitators for all students. Students of high implementers achieved higher test scores and reported higher motivation than did students of low implementers. (Contains 12 references.) (SM)

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Results of Pilot Study to Evaluate the Community for Learning (CFL) Program

by
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Background

Community for Learning (CFL) is a data-based, comprehensive K-12 school reform program that focuses on high standards of student achievement and positive student self-perception. This program includes a site-specific planning framework for research-based schoolwide reform and coordinated instruction and related services delivery that enhance schooling based on the individual characteristics and learning needs of the sites—including those of the students, school(s), and their larger community (Wang, 1992; Wang, 1998; Wang, Haertel, & Walberg, 1997). Based on twenty years of research, the classroom instruction component, Adaptive Learning Environments Model (ALEM), helps teachers tailor learning experiences to the individual needs of each student. Teachers use a variety of strategies to assist students in learning to take responsibility and initiative for planning and assessing their attainment of educational objectives and standards. Strategies include constant assessment to check that the instructional strategies designed for each student are working and modification of strategies if necessary. Constant individual attention is available for students who require more classroom support. In the broader CFL program, it is also recognized that students learn in environments other than the classroom. To implement this concept and provide the organizational structure for program support, the program uses a site-based CFL facilitator, who is trained to connect the community, district, and schools to support student and family learning in all environments.

A question of interest in evaluating the effectiveness of the CFL program in meeting its design goals is whether it is "learner-centered" as defined by survey tools developed in keeping with the American Psychological Association Work Group of the Board of Educational Affairs research-validated *Learner-Centered Psychological Principles* (1997). The Assessment of Learner-Centered Practices (ALCP) surveys (McCombs, 1999) address teacher beliefs and their consistency with the *Principles*. For teachers and students, the surveys also assess the degree to which classroom practices are in keeping with the *Principles* in four domains related to positive student motivation and achievement (McCombs, 1999; McCombs & Lauer, 1997). These

domains of classroom practice are (1) creating a positive classroom climate and relationship with each student, (2) honoring student voice and providing individual learning challenges, (3) encouraging higher-order thinking and learning skills, and (4) adapting to a variety of individual developmental differences.

Given the alignment of ALCP survey variables with CFL program design goals, the surveys provide an external evaluation of the degree to which both teachers and students perceive the program to be achieving these goals. In addition, the use of feedback from ALCP teacher and student surveys helps individual classroom teachers identify discrepancies between (a) their beliefs and perceptions of classroom practices and those shown in prior research to be most effective in increasing student achievement and motivation and (b) their own and their individual student's perceptions of classroom practices in each of the four domains. Thus, the ALCP surveys can also identify areas of potential changes in teacher beliefs and practices to better meet the needs of all students.

In the context of the pilot study, the Learner-Centered Model (McCombs, 1997, 1998, 1999; McCombs & Whisler, 1997) and self-assessment tools provide a research-validated, principle-based framework both for evaluating the process for best implementing the CFL program and for scaling up its use as a comprehensive school reform model at a national level. The Learner-Centered Model provides an overall framework for examining the most effective implementation processes for comprehensive and systemic reform models and the CFL model in particular. It also helps identify ways to support CFL program implementation that are consistent with current research and the APA *Principles*.

Purpose of the Study

The purposes of this pilot study were (a) to examine whether the CFL program is meeting its learner-centered design goals and (b) to identify potential areas of support needed for large-scale national implementation of the CFL program. To address the first purpose, the ALCP

surveys for teachers and students in fourth and fifth grade were used to examine relationships between teacher and student scores on the surveys and degree of CFL program implementation. The surveys were conducted at two East coast sites in various stages of the CFL program. By establishing positive relationships between degree of CFL program implementation (high, low) and the learner-centeredness of the program as perceived by teachers and students, program effects will be empirically related to the APA *Learner-Centered Psychological Principals*, and potential areas of support needed for large-scale implementation of the CFL program can be identified. Interviews were conducted with key personnel in the selected pilot sites, to address the second purpose directly.

Methods

Study Design

Two inner city urban elementary school sites (Trenton, New Jersey, and Washington, DC) participating in the CFL program were selected for this pilot study. The sample consisted of the classes shown in Table 1 from each of the three participating schools: Grant Elementary, Davis Elementary, and Walker Jones Elementary.

All students and teachers completed the grades four and five ALCP surveys; students completed the student version. There were two Spanish speaking classes at Grant that completed the Spanish version of the grades four and five ALCP survey.

Table 1
Sample Participating in CFL Pilot Study

Pilot Study CFL Implementation Sites				
	Teacher Sample Grades		Student Sample Grades	
Schools/Site	4	5	4	5
Trenton, NJ				
Grant	3	2	23, 19, 20	21, 23
Washington, DC				
Davis	3	2	18, 19, 22	15, 16
Walker Jones	1	2	13, 20, 19	20, 18

Measures

Data from the degree of implementation of the CFL program were collected in the Spring of 1999 at the participating schools. From that data, high and low CFL implementers were identified for the purpose of the pilot study analyses.

The level of learner-centered practice was measured by 36 items from the ALCP surveys for students and teachers in grades four and five. These items include subscales that classify practices into the four domains: providing positive classroom climate and relationships; honoring student voice and providing individual challenge; encouraging higher-order thinking and learning skills; and adapting to individual developmental differences.

The level of learner-centered beliefs was assessed on the teacher ALCP survey for grades four and five by 35 items with subscales that classify items into three categories: learner-centered beliefs about learners, learning, and teaching; non learner-centered beliefs about learners; and non learner-centered beliefs about learning and teaching.

Standardized student achievement data (Stanford and ESPA) and teacher ratings of student classroom achievement scores (reported for individual students in the range of 1-100) were collected by the CFL facilitators at each school.

Data Collection Procedures

A University of Denver Research Institute (DRI) and Laboratory for Student Success (LSS) planning meeting was held at Temple University on April 15, 1999, to address data collection and planning issues for the pilot study. It was agreed that the study would focus on two primary areas: (1) Does high implementation of the CFL program show that it meets its learner-centered design goals? (2) Does information on relationships between "learner-centeredness" and CFL program impact suggest ways for supporting scaling up program implementation and collecting follow-up data. Members of the DRI and LSS staffs also discussed data sources necessary for the database. It was agreed that the database would include standardized student achievement scores, degree of implementation scores for at least the current year, and ALCP scores for participating students and teachers. Interviews with selected teachers and students were also planned for the purpose of collecting information that could be helpful in identifying areas of further CFL program support for large-scale national implementation or scaling up of the program.

DRI staff traveled to all schools participating in this pilot study on May 24-26, 1999, for the purpose of conducting interviews with the school principal, CFL facilitator, a sample of teachers, and two students from each class participating in the pilot study. All teachers, CFL facilitators, and principals were interviewed with the exception of one Grant Elementary teacher, who was on vacation. Each school was visited for one day, and interviews with teachers and administrators were conducted for approximately 30-45 minutes. Student interviews were approximately 15 minutes in duration. All individuals participating in the interviews were assured that their remarks would be confidential and would not be shared with LSS or school staff except as general group remarks.

Student class rosters were provided to DRI by LSS staff for assigning individual teacher and student identification (ID) codes. Answer sheets were coded with these IDs to insure the

anonymity of the participants. Complete instructions, ID coded answer sheets, and individual copies of the grades four and five ALCP survey were provided for each student and teacher. LSS staff administered the ALCP student surveys to all participant classes at the three schools during the first week of June 1999. Teachers were given surveys and asked to complete them at their convenience. In addition, teachers were asked to provide classroom achievement scores (from 1 to 100) for each student, information concerning their training and familiarity with the CFL program, length of teaching career, and other background information on prior CFL training. CFL facilitators at the schools were liaisons between the teachers and the LSS staff.

DRI designed a comprehensive database including data provided by the LSS staff, CFL program implementation scores, ALCP scores for students and teachers, student classroom achievement scores, student standardized test scores in reading and math, and demographic information. See Table 2 for a list of all variables in the pilot study database, and for definitions or examples of ALCP variables.

Results

Analysis and Results of Assessment of Learner-Centered Practices (ALCP) Surveys

Variables for Assessing Learner-Centeredness

Definitions and examples of the teacher and student variables measured in the ALCP surveys are presented in Table 2. As shown, pilot study scores on each variable can be compared with prior validation sample scores for teachers found to be most effective in terms of engaging in practices that produce the highest level of student motivation and achievement. As determined by prior research, the best measure of learner-centeredness is student perception of the teacher's classroom practices (McCombs & Lauer, 1997; McCombs, 1999). Student perceptions best predict student motivation and achievement as compared with any of the teacher variables (beliefs, characteristics, and perceptions of classroom practices). Thus, the analyses reported below first look at relationships between CFL degree of implementation (high, low) and student

Table 2
VARIABLES MEASURED IN THE ASSESSMENT OF LEARNER-CENTERED PRACTICES (ALCP) SURVEYS*

Teacher Variables	Explanation (Definition or Example)	Grades 4-5 LC Rubric**
Teacher Beliefs		
Learner-centered beliefs about learners, learning, & teachir	I believe that listening to students in a caring way helps them solve their own problems.	High=≥3.3
Nonlearner-centered beliefs about learners	There are some students whose personal lives are so dysfunctional that they simply do not have the capability to learn.	Low=<1.9
Nonlearner-centered beliefs about learning and teaching	I can't allow myself to make mistakes with my students.	Low=<2.5
Teacher Perceptions of Classroom Practices		
Creates positive interpersonal relationships/climate	I demonstrate to each student that I like him/her as an individual.	High=≥3.6
Honors student voice, provides individual learning challen	I encourage students to express their own unique thoughts and beliefs.	High=≥3.5
Encourages higher-order thinking and self-regulation	I teach students a variety of learning strategies.	High=≥3.3
Adapts to individual developmental differences	I get to know each student's unique background.	High=≥3.3
Teacher Self-Efficacy	Beliefs in competency to be an effective teacher and facilitator of learning for all students.	High=≥3.4
Reflective Self-Awareness	Degree to which teacher is aware of the influence of thoughts and feelings on actions and tends to analyze and reflect on personal or professional experience.	High=≥3.1
Autonomy Support:		
	Degree to which teacher believes learning is best supported by:	
Moderately Controlling	Moderate teacher control and direction of learning.	Higher=≥3.0
Highly Controlling	High teacher control and direction of learning.	Lower=<3.4
Moderately Autonomy Supportive	Moderate level of support for student choice and personal control over learning.	Lower=<2.5
Highly Autonomy Supportive	High level of support for student choice and personal control over learning.	Higher=≥2.9

Student Variables	Explanation (Definition or Example)	LC Rubric
Student Perceptions of Classroom Practices		
Creates positive interpersonal relationships/climate	My teacher likes me.	High=≥3.3
Honors student voice, provides individual learning challen	My teacher listens carefully to what I am saying.	High=≥3.0
Encourages higher-order thinking and self-regulation	My teacher helps me remember what I learn.	High=≥3.0
Adapts to individual developmental differences	My teacher asks me what I do when I'm not in school.	High=≥2.6
Differences Between Student and Teacher Perceptions of Classroom Practices		Low=0 to - 7
Creates positive interpersonal relationships/climate	Student's ratings of teacher's positive relationships minus teacher's rating.	Low=>-.3
Honors student voice, provides individual learning challen	Student's ratings of teacher's honoring student voice minus teacher's rating.	Low=>-.6
Encourages higher-order thinking and self-regulation	Student's ratings of teacher's encouraging higher-order thinking minus teacher's rating.	Low=< - 3
Adapts to individual developmental differences	Student's ratings of teacher's adaptation to individual differences minus teacher's rating.	Low=>-.7
Student Learning and Motivation Variables		
Self-Efficacy	Beliefs in competency to learn and achieve.	High>3.7
State Epistemic Curiosity	Knowledge-seeking curiosity in learning.	High =≥3.2
Active Learning Strategies	Strategies directed at being actively engaged while learning.	High=≥3.2
Effort Avoidance Strategies	Strategies directed at avoiding effort while learning.	Low=<1.9
Task Mastery Goals	Intrinsic motivational orientation directed to learning and mastering task goals.	High=≥3.6
Performance Oriented Goals	Extrinsic motivational orientation to achieve high grades or scores rather than learn.	Low=<3.0
Work Avoidance Goals	Motivational orientation to avoid assignments and other work involved in learning.	Low=<2.2
Achievement Scores	Teacher-assigned classroom achievement score on a scale from 0 to 100.	High>86.2

* All variables have scores ranging from 1-4 except Achievement Scores, which range from 0 to 100.

**Learner-Centered Rubric based on scores from classrooms in prior validation sample (McCombs & Quiat, 1999) with highest student achievement and motivation.

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perceptions of classroom practices, followed by analyses of degree of implementation differences in terms of teacher beliefs, characteristics, and perceptions of classroom practices as measured by the ALCP surveys. As a final test of the learner-centeredness of the CFL program, analyses are reported that examine whether the most highly achieving and motivated students differ from students making up the Learner-Centered Rubric (see Table 2) from national validation samples in terms of their perceptions of classroom practices, motivation, and achievement score patterns (McCombs & Lauer, 1997; McCombs & Quiat, 1999).

Analysis of Learner-Centeredness Based on High and Low Degree of Implementation Scores

To determine high and low CFL implementers, frequencies of subjects were analyzed on the total percentage implementation variable and the mid-point was selected. The teachers with scores below the mid-point were selected as "low implementers," and those above were selected as "high implementers." In order to determine whether there were differences in learner-centeredness between high (n = 6) and low implementers (n = 7), nonparametric methods of analysis were used due to the small total teacher sample size (n = 13). Mann-Whitney Tests were used to examine significant differences for all learner-centered variable means for teacher and student perceptions, and standardized and classroom achievement scores, based on whether the teacher was a high or low implementer of CFL.

Results for each of the analyses reported below are graphed to enable an examination of how high and low implementers scored on variables indicating "learner-centeredness" as compared with (a) scores of teachers (or students) from other schools in the United States with comparable demographics and (b) scores of teachers from prior research (McCombs & Lauer, 1997; McCombs & Quiat, 1999) that were most effective in terms of facilitating high levels of student achievement and motivation that form the basis for what McCombs (1999) has termed the "Learner-Centered Rubric."

A significant difference was found for the variable "mean student perception of higher-order thinking" between low (M Rank = 4.86) and high implementers (M Rank = 9.50, U(13) = 6.00, $p < .03$), indicating that students who had teachers who were high implementers were more likely to see their teachers as performing practices that would facilitate high-order thinking and learning for them (see Figure 1 in the Appendix). Although Figure 1 shows a trend for students of high CFL implementers to also perceive their teachers as engaging in more learner-centered practices in the other three domains than students of low CFL implementers, these differences were not significant at less than $p = .10$.

Differences in student motivation with teachers classified as high and low CFL program implementers are reported in Figure 2 (see Figure 2 in the Appendix). As can be seen, there were small and insignificant differences between students with high implementing as compared to low implementing teachers, except for the scale that measured student effort avoidance where the differences approach significance [high implementers (M Rank = 9.00), low implementers (M Rank = 5.29, U(13) = 9, $p = .09$]. For the effort avoidance scale, students of high implementing teachers reported somewhat higher levels of effort avoidant behaviors than students of low implementing teachers. Similarly, Figure 3 shows that there were no significant achievement differences between students of high and low implementing teachers, although standardized test scores in reading and math were somewhat higher for students of high versus low implementing teachers (see Figure 3 in the Appendix).

Teacher's degree of CFL implementation was most significantly related to variables that assessed their own perceptions of learner-centered practices and beliefs (see Figure 4 in the Appendix). As shown in Figure 4, high implementers were more likely than low implementers to see themselves as engaging in higher levels of learner-centered practice in all four domains, but particularly in the domains of facilitating higher-order thinking [high implementers (M Rank = 8.08), low implementers (M Rank = 3.50), U(11) = 2.50, $p < .02$] and adapting to individual

differences [high implementers (M Rank = 7.83), low implementers, (M Rank = 3.80), U(11) = 4.00, p < .05].

As another indicator of learner-centeredness, differences between a teacher's perceptions of his/her practices in each domain and that teacher's students can be compared. Based on the Learner-Centered Rubric, highly learner-centered teachers as compared with less learner-centered teachers have relatively small differences in their perceptions of practice from those of their students. These differences in teacher and student perceptions of classroom practices for high and low implementers in the pilot study are graphed in Figure 5 (see Figure 5 in the Appendix).

High implementers also demonstrated (see Figure 6 in the Appendix) higher reflective self-awareness, i.e., more awareness of the influence of their thoughts and feelings on their students' ability to learn, and higher levels of self-reflection on their professional experiences [high implementers (M Rank = 8.33), low implementers (M Rank = 3.20), U(11) = 1.00, p < .01]. In addition, teachers who were higher implementers of the CFL program reported higher levels of teacher self-efficacy, i.e., they felt more competent about their ability to be an effective teacher and facilitator for all students [high implementer, (M Rank = 7.92), low implementers (M Rank = 3.70), U(11) = 3.50, p < .03].

Degree of CFL implementation measures are graphed in Figure 7 for high and low program implementers (see Figure 7 in the Appendix). The analysis of the CFL Program Implementation components was conducted by using the Mann-Whitney U Test for nonparametric means and indicated that, for the most part, there was a significant difference between high and low CFL implementers. Exceptions were in the areas of Managing Aids and Diagnostic Testing. "Record keeping" [high implementers (M Rank = 9.83), low implementers (M Rank = 4.57), U(13) = 4.00], "Prescribing" [high implementers (M Rank = 10.25), low implementers (M Rank = 4.21), U(13) = 1.50], "Monitoring and diagnosing" [high implementers (M Rank = 9.75), low implementers (M Rank = 4.64), U(13) = 4.50], "Interactive teaching" [high implementers (M Rank = 10.00), low implementers (M Rank = 4.43), U(13) = 3.00],

"Motivating" [high implementers (M Rank = 9.50), low implementers (M Rank = 4.86), U(13) = 6.00] and "Developing student responsibility" [high implementers (M Rank = 10.25), low implementers (M Rank = 4.21), U(13) = 1.5] were all significant at the $p \leq .01$ level. "Arranging space and facilities" [high implementers (M Rank = 9.50), low implementers (M Rank = 4.86), U(13) = 6.00] and "Instructing" [high implementers (M Rank = 9.00), low implementers (M Rank = 5.29), U(13) = 9.00] showed significance at the $p < .05$ level. The area of "Creating and maintaining instruction materials" approached significance [high implementers (M Rank = 9.00), low implementers (M Rank = 5.29), U(13) = 6.00, $p = .07$].

Analysis of Learner-Centeredness Based on High and Low Student Self-Efficacy and Classroom Achievement Scores

Prior research (McCombs & Lauer, 1997) has demonstrated significant relationships between students' reported self-efficacy and classroom achievement as a function of student perceptions of the learner-centeredness of their teacher's classroom practices. Therefore, this relationship was examined with student data in this pilot study. These analyses were also calculated as a validity check on the appropriateness of the ALCP student surveys for inner city children with demographics similar to those in the pilot study.

For the 186 students in the sample with both self-reported self-efficacy and teacher-recorded classroom achievement scores, the Pearson's correlation between these two variables was also significant ($r_{186} = .29$, $p < .00$). These variables were then used to define the high/low achievement and motivation categories for this analysis. Students who reported high self-efficacy ($x \geq 3.50$) and were assigned higher achievement scores by their teachers ($x \geq 75$) were selected as "high achievers" ($n = 26$). Scores of all student variables were then compared between this category of pilot study students and the Learner-Centered Rubric. In general, high achievement/high self-efficacy students displayed similar means on all categories of variables as shown below in Table 3.

Table 3
Comparisons of High Achievement/High Self-Efficacy Students in Pilot Study with Students in the Learner-Centered Rubric

Variables	Pilot Study Means	Learner Centered Rubric Means
Student Perceptions of Classroom Practices		
Creates positive relationships	2.9	3.3
Honors student voice	2.9	3.0
Encourages higher-order thinking	3.1	3.0
Adapts to individual differences	2.8	2.6
Student Motivation		
Self-efficacy	3.7	3.7
State epistemic curiosity	3.2	3.2
Active learning strategies	3.3	3.2
Effort avoidance strategies	2.0	2.1
Task mastery goals	3.6	3.2
Performance-oriented goals	3.7	2.7
Work avoidance goals	2.4	2.2
Student Classroom Achievement	86	91

As demonstrated, pilot study students who were using the CFL program met or exceeded nearly all scores represented by the Learner-Centered Rubric, particularly in areas emphasized by the CFL program, such as higher-order thinking, adapting to individual differences, task mastery goals, and performance-oriented goals.

Correlational analysis was used to examine the relationship between teacher-recorded classroom achievement scores and the Stanford 9 reading and math scores. Results indicated a significant relationship between students' classroom achievement scores and Stanford 9 reading scores ($r = .38$). Significant relationships were also found between classroom achievement scores and the Stanford 9 math scores ($r = .46$). The correlation between student scores on the Stanford 9 reading and math scales was ($r = .68$).

Summary of Interviews with Schools in CFL Pilot Study

The interviews with school staff and students generally indicated that participants perceived the CFL program to be working well and making a difference in student achievement and teacher effectiveness. Shared perceived benefits included:

- Helps teachers establish personal relationships and identify individual student needs.
- Helps students develop increased responsibility for their own learning.
- Provides teachers with more strategies for meeting diverse student needs.
- Gives students increased opportunities to experience academic success.
- Provides a model for consistent school and classroom practices that have increased student achievement.
- Provides a good management system for maintaining student discipline.

Areas perceived as important in terms of scaling up CFL program implementation in national sites included strategies for:

- Restructuring to facilitate cross-grade level teacher planning time, opportunities to visit other teacher's classrooms, and teacher time for sharing successful strategies and tailoring the CFL program to specific student needs.
- Increased parent involvement in student prescriptions and diagnostic testing.
- Integrating CFL programs components with other district mandates (e.g., standards, assessments, teacher and school accountability requirements).
- Setting up teacher mentoring programs to pair more experienced, effective CFL teachers with newer, less experienced teachers.
- Providing field trips or video examples of the CFL program in action, particularly establishing a wider network of support and demonstrating how to implement various components over a 90-minute block of time.

Discussion

Findings from the pilot study of the CFL program indicate that teachers classified as high implementers as compared to low implementers generally demonstrate qualities associated with learner-centered teachers in prior research (McCombs & Lauer, 1997). In particular, significant relationships were found between teacher perceptions of "learner-centeredness" as assessed by research validated variables on the ALCP surveys (McCombs, 1999) and degree to which teachers in the pilot study were implementing the CFL program. Teachers in the pilot study who were the highest implementers of the CFL program perceived that they were facilitating higher-order thinking and adapting to individual differences. These teachers perceived that they were meeting metacognitive and special learning needs, a finding that is consistent with the individualized nature of the CFL program and its emphasis on promoting student responsibility for learning.

In addition, high CFL implementers expressed more confidence in their ability to be effective teachers and facilitators for all learners in the classroom, (high teacher self-efficacy). This finding confirms that the structure and strategies of the CFL program facilitate positive teacher efficacy, including record keeping, diagnostic testing, prescribing assignments based on current and past performance, and continuously monitoring student work and achievement. The CFL program appears to offer a positive framework for teachers to manage their classrooms and students and meet student needs for learner-centered practices in this area.

The finding that teachers who are high implementers of the CFL program are higher than ALCP validation samples in reflective self-awareness is also a positive trend. Teachers' ability to self-analyze may be a consequence of time spent with the CFL program, but further research is necessary. More specific data collection on type of training and years of involvement with the program would be desirable with larger samples of teachers differing in their degrees of CFL program implementation. Larger sample sizes with diverse teacher and student populations

would also allow for exploration of other important relationships such as whether "learner-centeredness" is a function of amount of CFL teacher training.

In terms of student perceptions of teacher practices in the classrooms of high and low CFL program implementers, the findings are promising and indicate a positive trend toward high implementers being perceived as more learner-centered in all four domains of learner-centered practice, and particularly in the domain that encourages higher-order thinking and problem solving. This domain of practice also includes providing individual learning challenges and developing self-regulated learning skills and personal responsibility for learning, which are areas of emphasis in the CFL program. In addition, there was an overall trend for CFL program implementers, regardless of level of implementation, to be more attuned to their students' perceptions; the difference between student and teacher perceptions of practice was smaller than in other schools with comparable demographics.

Findings related to whether the CFL program led to higher student achievement and motivation for high compared to low implementers were also positive. For both standardized test measures (reading and math scores), students of high implementers achieved higher scores than students of low implementers. Similarly, for student motivation measures that are indicative of CFL program emphasis (student self-efficacy, knowledge-seeking or epistemic curiosity, task mastery goals), there was a trend for students of high implementers to report higher scores than students of low implementers. For measures of student-reported effort avoidance strategies and work avoidance goals, results were not in the predicted direction in terms of students of high implementers scoring themselves lower on these variables than students of low implementers. On closer examination of this prior research and the items comprising the effort avoidance strategies and work avoidance goals scales, several factors were identified that may explain these findings.

It should be noted that the fourth and fifth grade students in the pilot study are quite dissimilar to the students in the validation study of the motivation measures used for effort avoidance strategies and work avoidance goals (Meece, Blumenfeld, & Hoyle, 1988) in terms of

demographics (racial groups, socioeconomic status) and makeup of the pilot site schools. These survey variables were validated with a different student sample, and items do not reflect school experiences, realities, and motivation for many inner-city children. Furthermore, a number of items on both the effort avoidance and work avoidance scales may not have been understood by children as intended by Meece et al., 1988. For example, in the CFL program children are encouraged to complete the prescribed curriculum objectives in order to feel successful. The three questions that begin "I feel most successful ...," may have been ambiguous to CFL students, in that they are encouraged to feel the satisfaction of completing prescribed assignments, whether they complete them easily or with difficulty. Another item on the survey addressed completing work quickly. However, one feature of the CFL program is that students can work on the computer or at some other station in the classroom when they have completed prescribed assignments. Students may have answered this question in the affirmative because they want to finish assignments quickly in order to spend more time with alternative media or other materials that they enjoy more, not because they want to avoid work or effort.

Further encouraging results were from analyses of those students in the pilot study who had the highest classroom achievement and self-efficacy as compared to students from validation studies represented by the Learner-Centered Rubric. The analyses revealed that those students closely matched students from national studies, indicating that the measures of learner-centeredness, the ALCP surveys, and the Learner-Centered Rubric were valid for the population studied. These analyses showed patterns found in the validation studies with the ALCP, in that the most positive achievement and motivation outcomes occur when students perceive their teachers as engaged in learner-centered practices. These results also revealed that the CFL program is having a positive impact on student achievement and motivation. Additional data with larger student and teacher samples are needed to further substantiate these relationships.

Analyses confirmed that high implementers engage in significantly higher percentages of behaviors related to learner-centered practices than low implementers. Furthermore, these

behaviors and practices correlated with both higher degrees of learner-centered practices and student achievement. Another important finding was that teacher-assigned classroom student achievement scores were highly correlated with standardized student test scores in reading and math. This finding substantiates the positive impact learner-centered teacher practices have on student perceptions, motivation, and achievement.

Finally, interview results further substantiated the positive benefits of the CFL program in helping teachers form positive student relationships, meet diverse student needs, help students develop responsibility for their own learning, and contribute to increased student academic success, positive discipline, and classroom management. Comments from CFL facilitators, teachers, and school principals also indicated a number of potentially important supports that can assure positive results when scaling up the CFL program implementation to national sites. These included expanded opportunities for teachers to plan in cross-grade groups, to mentor each other, and to form a wider support system across CFL sites.

Conclusions and Recommendations

In summary, the pilot study findings were highly encouraging with respect to revealing consistent and significant relationships between CFL program variables and selected learner-centered variables. The learner-centered variables that displayed the most significant relationships were those that capitalized on strong CFL program features such as supporting higher-order thinking and problem-solving skills, enhancing student self-efficacy and responsibility for learning, and supporting individualized instruction and instructional management. There were trends toward high CFL teacher implementers also indicating higher learner-centered beliefs, lower non learner-centered beliefs, and higher perceptions that they were engaging in other domains of learner-centered practice shown by research to be related to high levels of student achievement and motivation (establishing positive relationships and classroom climates, honoring student voice, and providing challenge).

Based on these preliminary pilot study results, the following recommendations are given:

- Conduct a large national study of relationships between CFL program features and variables within the learner-centered model, principles, and survey measures with a focus on their combined impact on student achievement and motivation variables using diverse student populations (e.g., Native American, Hispanic, African American students of differing socioeconomic levels) in diverse school contexts (e.g., rural, urban, suburban).
- Examine CFL scaling up issues in terms of support for program implementation and training that could strengthen the positive impact of this program on student achievement and motivation (e.g., mentoring, study groups, and field trips to other CFL sites).

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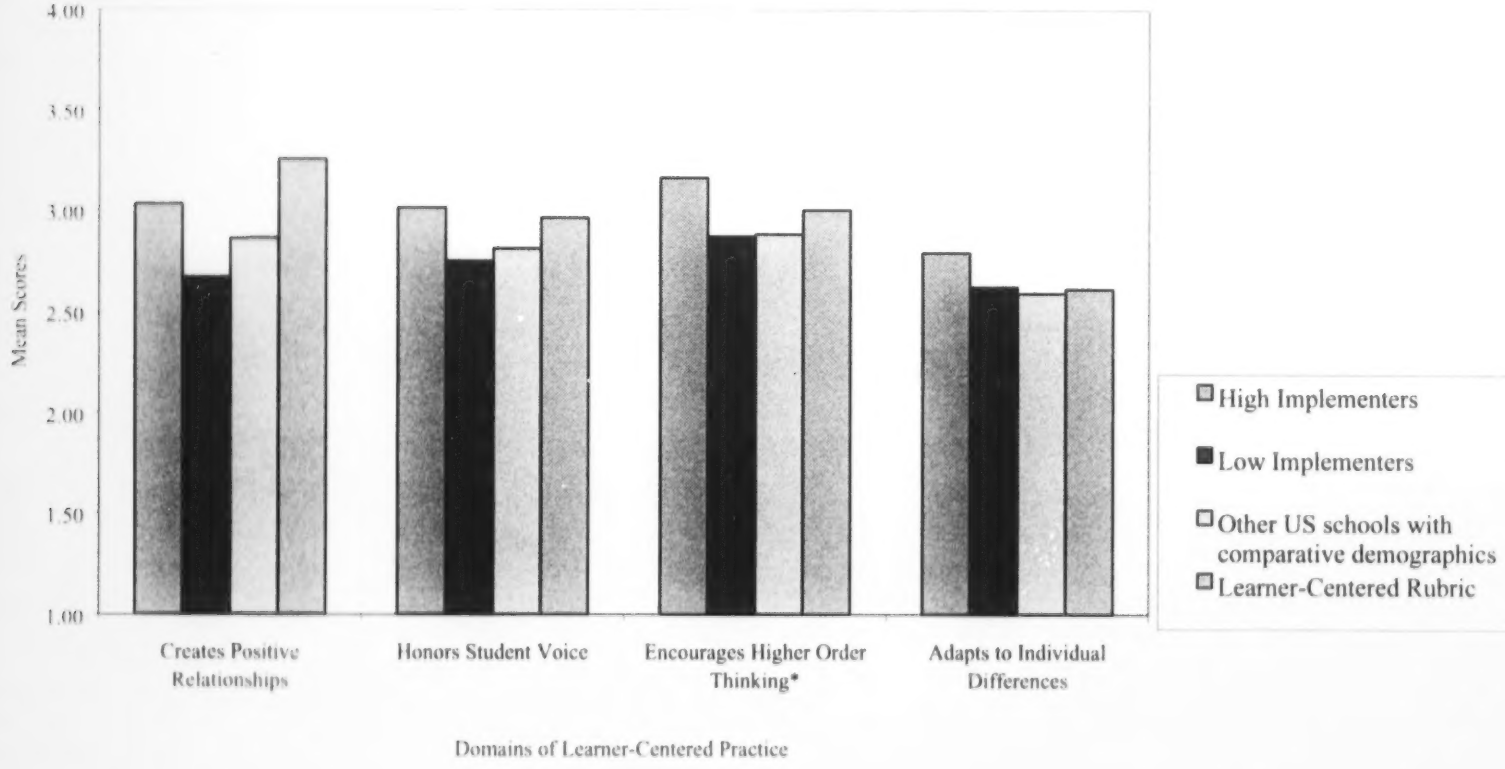
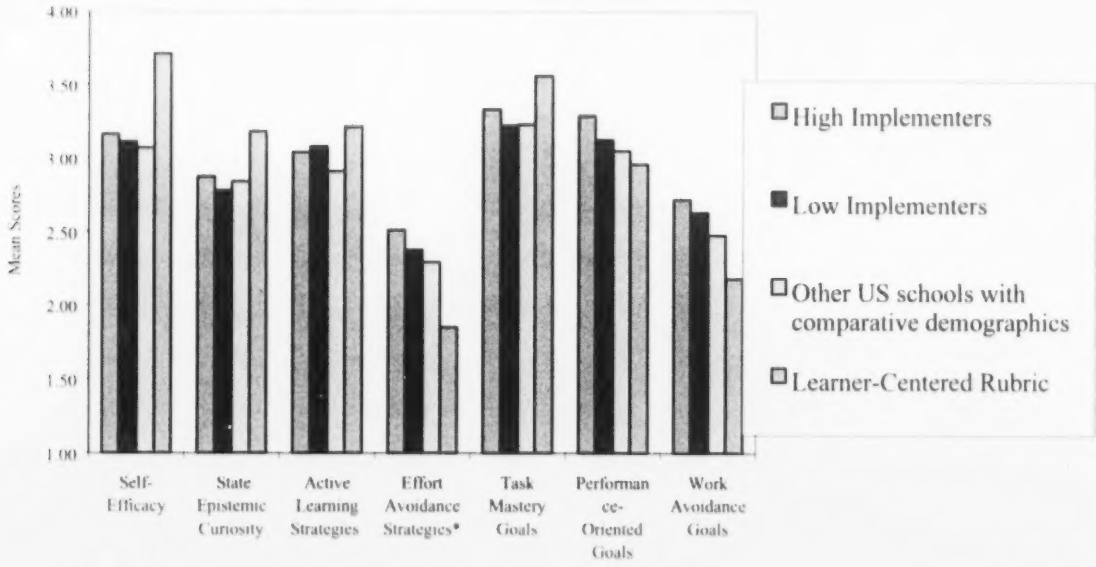
Appendix

Figure 1:
Mean Student Perceptions of Classroom Practices
by High/Low CFL Program Implementers



*Differences between high and low implementers are significant at the $p<.05$ level

Figure 2:
Mean Student Motivation Scores by
High/Low CFL Program Implementers



* Differences between high and low implementers approach significance at p=.09 level.

Figure 3:
Mean Student Achievement Scores for
High/Low CFL Program Implementers

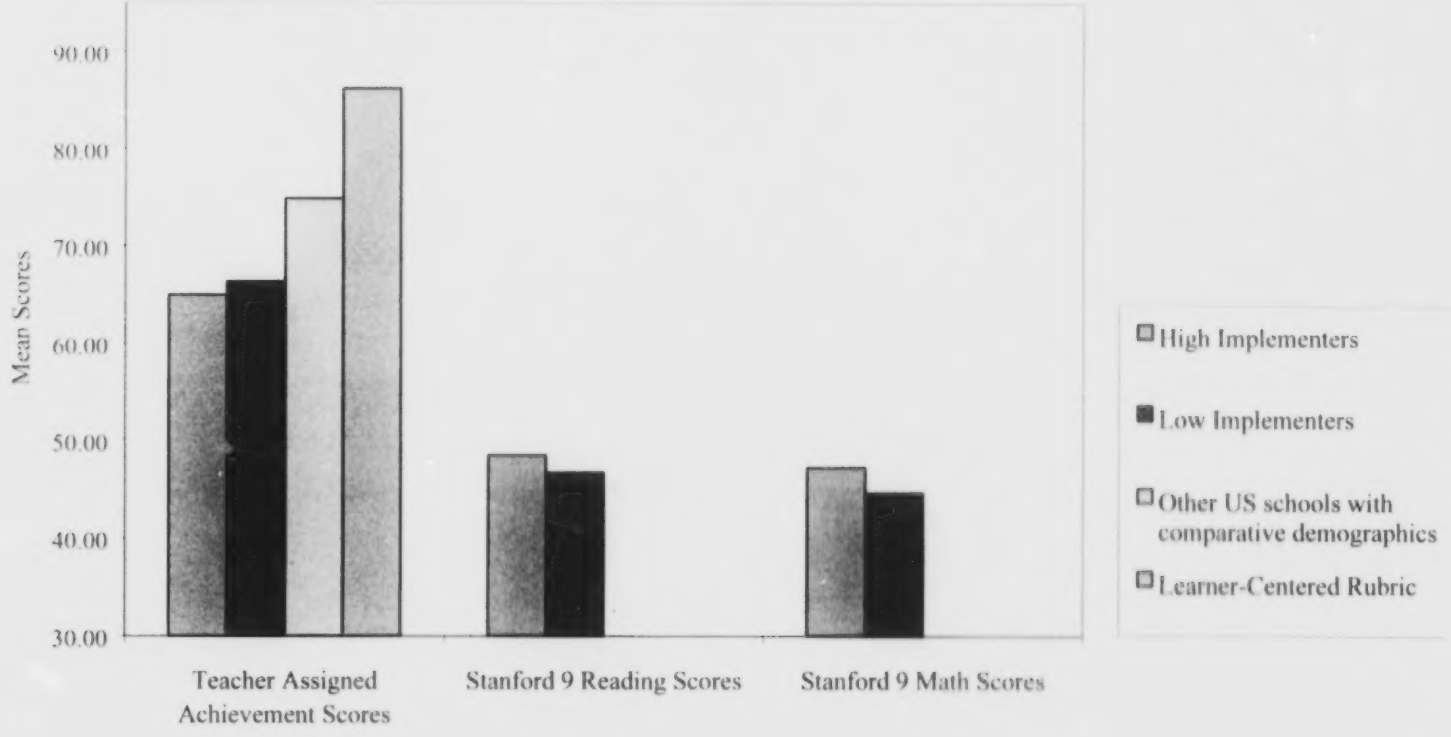
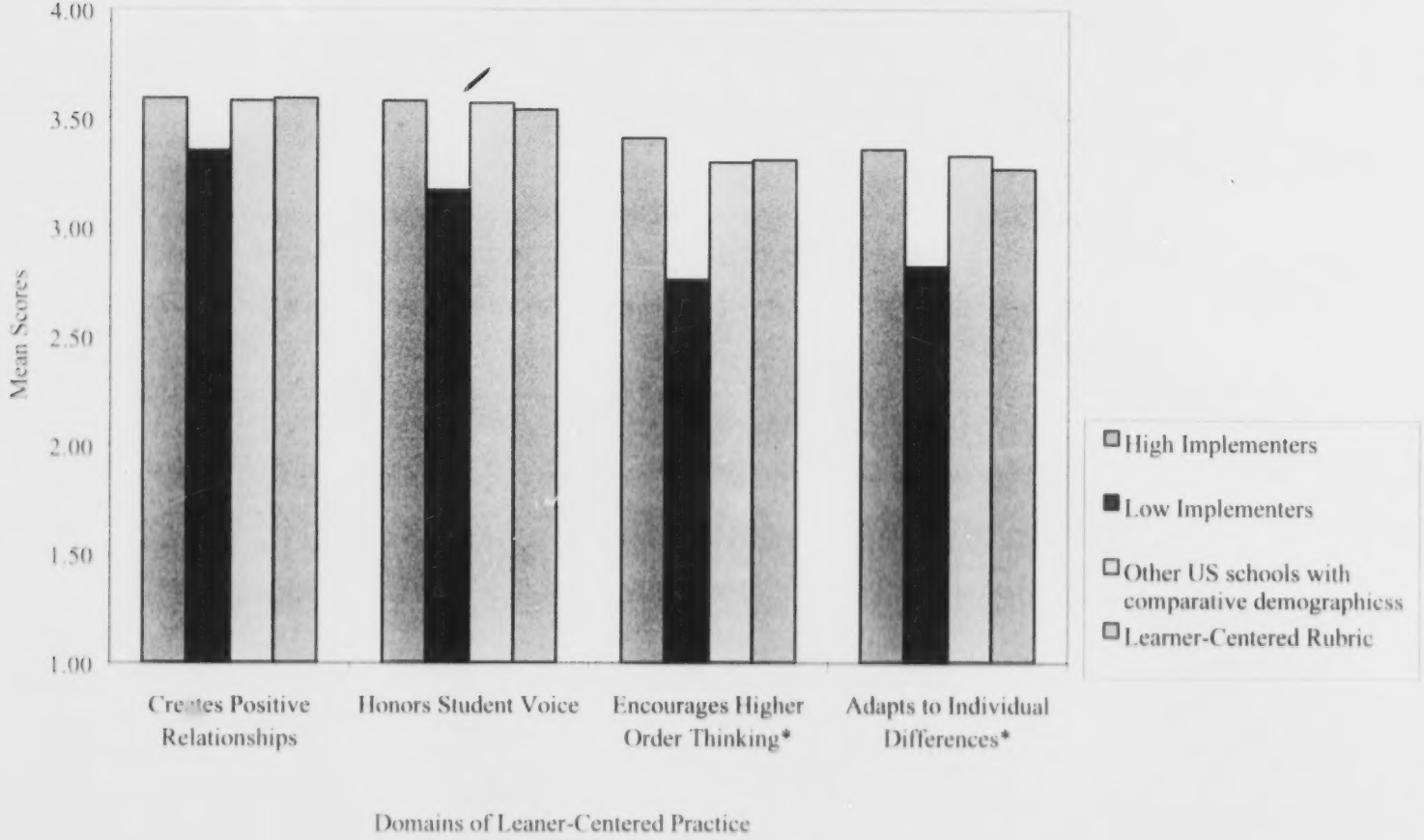
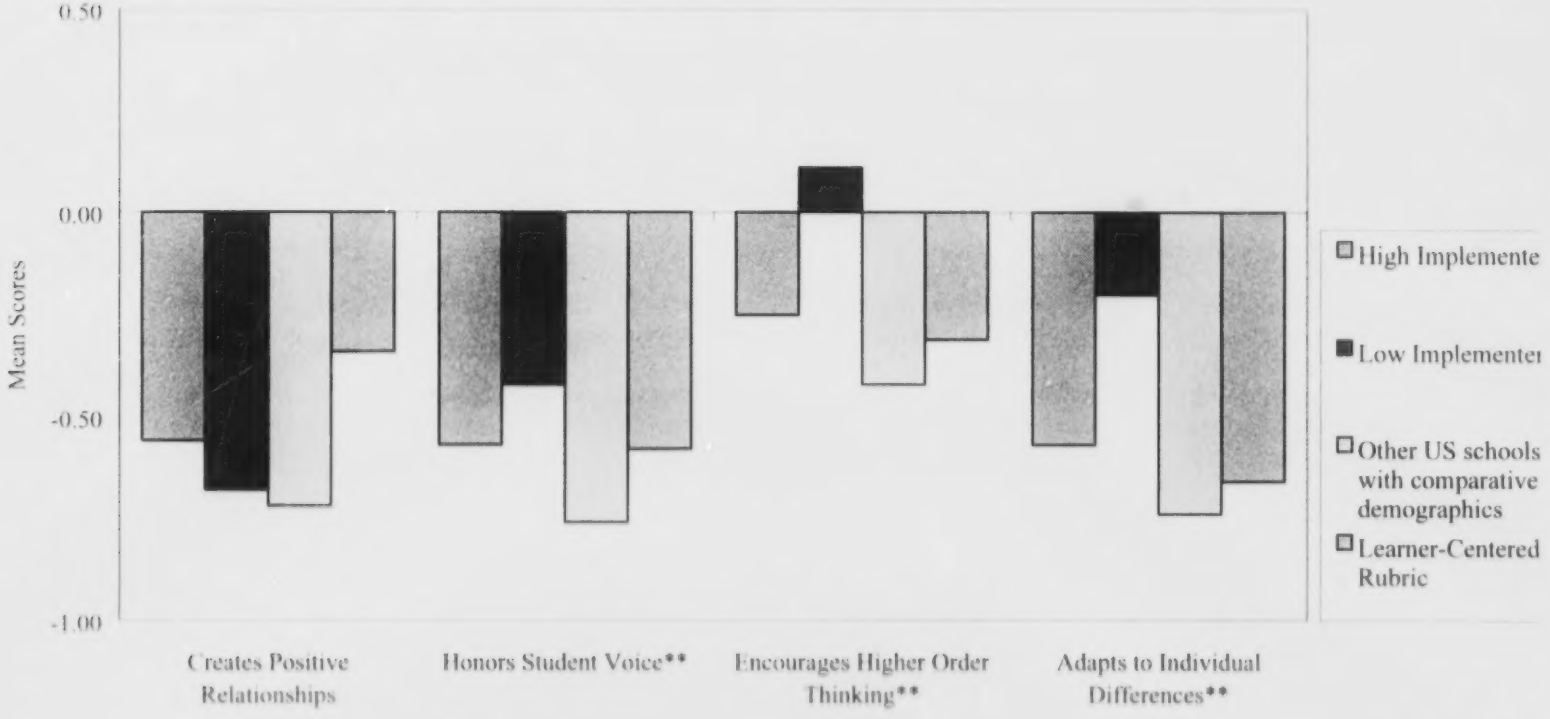


Figure 4:
Teacher Perceptions of Classroom Practices for High/Low CFL Program Implementers



*Differences between high and low implementers are significant at the $p<.05$ level.

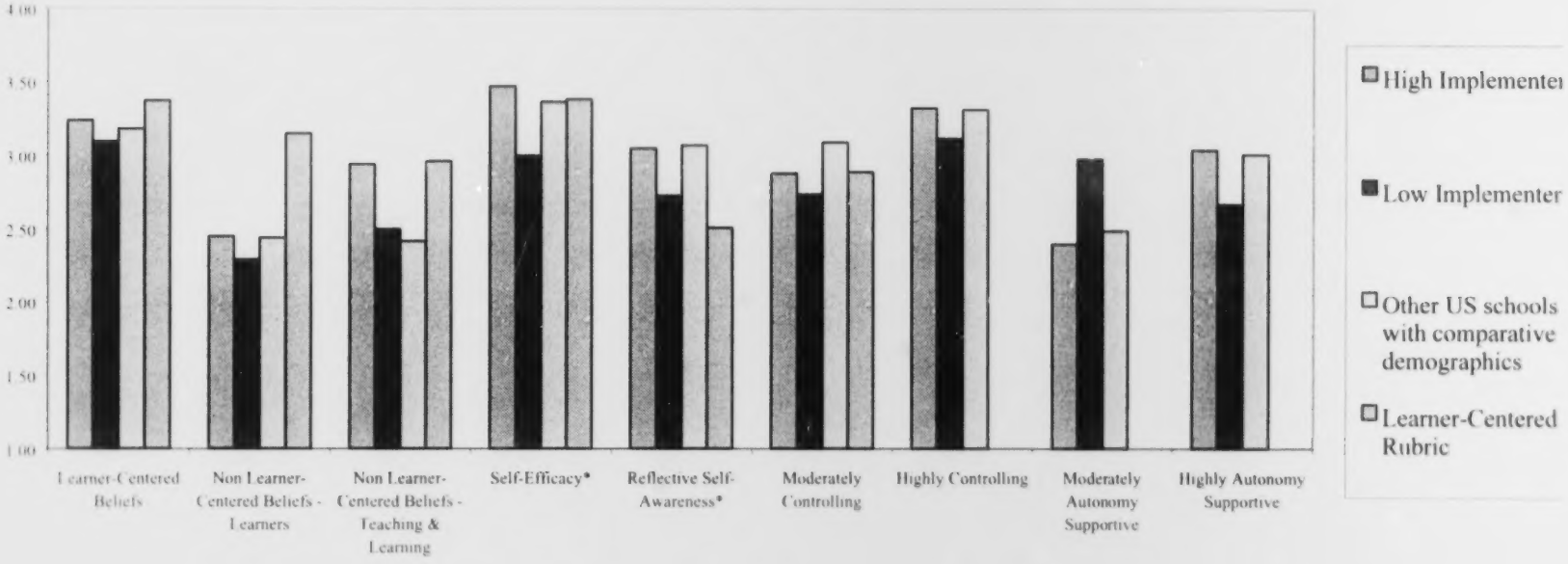
Figure 5:
Mean Differences Between Student and Teacher Perceptions of Practice for High/Low CFL Program Implementers*



* Differences are computed by subtracting each teacher's mean score from the mean scores of their students for each domain of classroom practice and then computing an overall mean across classrooms for the student groups shown here.

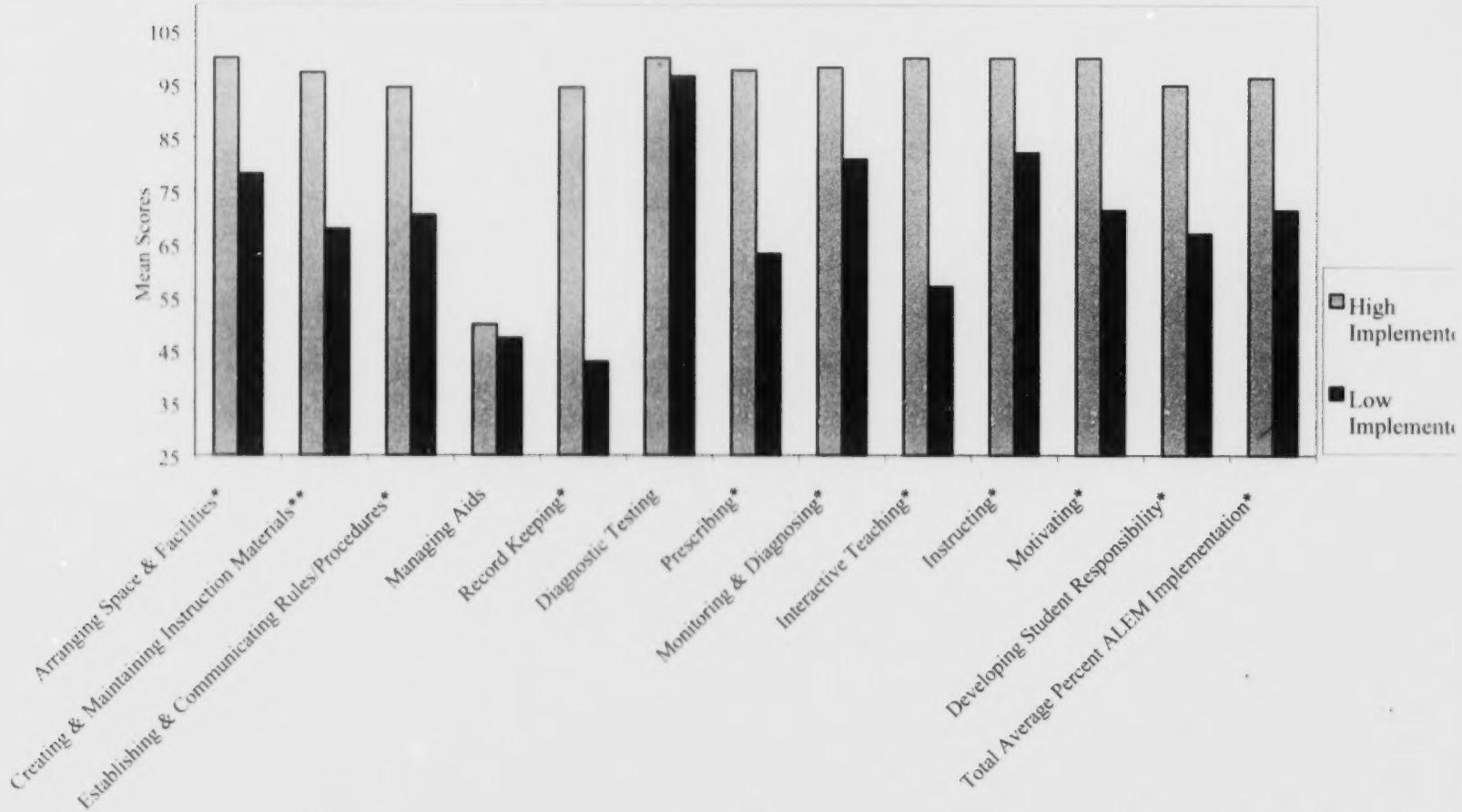
** Differences between high and low implementers are significant at the $p<.03$ level.

Figure 6:
Mean Teacher Beliefs and Characteristics
for High/Low CFL Program Implementers



*Differences between high and low implementers are significant at the $p<.03$ level.

Figure 7:
Mean Percentage Degree of Implementation for
High/Low CFL Program Implementers



* Differences between high and low implementers are significant at the $p<.05$ level.

** Differences between high and low implementers approach signficance at $p=.07$.